NABSnet Newsletter

#54 | 16 April 2025

NABSnet info

Kevin Bell

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Hi everyone in our NABSnet network

It was great to catch up with so many of you at the Masterclass in Townsville – there were 64 participants and 39 (61%) were practitioners from 30 different practices. The feedback was fantastic - everyone said they got a lot out of the workshops. And there were important discussions about 'what next'.

For those who weren't there, (and as a refresher for those who were), we'll summarise some of the info in this and subsequent newsletters, and on the website. Starting with Tristan Jubb's Epi101 and Shirley Turner's sampling troubleshooting tips.

One of the requests was to share more about disease events as they occur across the north. To start that process we'll also include a table of the SDIs that have come in over the last 6 months. There are also many of the SDI case reports summarised on the website https://nabsnet.com.au/nabs-sdis/

Other items in this newsletter:

- The featured SDI on multiple mortalities post-transport
- A note on the NTCA Conference - NABSnet there promoting the SDI opportunities to producers
- A prompt to keep cattle skin survey samples coming in.

I know we don't need any reminder of just how vast and challenging our northern region is - but the area and

impact of central Qld flooding is very sobering. Our best wishes to vets and producer clients dealing with this immense event.

Regards from me and Bill

Cheers Kev

Source: photo ABC News Shane Wendleborne; map BOM

There are now financial assistance packages available for primary producers, businesses and individuals impacted by the floods. Assistance includes:

- Disaster Recovery Assistance Grants up to $75,000 for on-property recovery costs
- Disaster Assistance Loans up to $250,000
- Essential Working Capital Loans up to $100,000
- Freight subsidies of up to $5,000.

For more information and to check eligibility, please visit QRIDA or call 1800 623 946.

Help applying for government financial assistance is available from the Rural Financial Counselling Service. Call 07 4622 5500.

Disaster recovery assistance is jointly funded by the Australian and Queensland Governments' Disaster Recovery Funding Arrangements (DRFA)

NABSnet SDIs in the last 6 months

Date	Location	Animal species	Presenting Syndrome	Numbers [sick / dead / at risk]	Diagnosis with lab findings	Diagnostic confidence	NND exclusions
Oct-24	QLD	cattle	neurological signs - head tilt in wagyu weaners	5 / 0 / 600	Cranial abscess + other systemic disease. Mixed bacteria.	possible	None
Oct-24	QLD	cattle	sudden death	40 / 19 / 1500	Haemonchosis with secondary coccidiosis	possible	BVDV (type 2)
Oct-24	WA	cattle	sudden death - feedlot heifers	30 / 48 / 288	Acute/subacute ruminal acidosis	definitive	None
Oct-24	QLD	cattle	ill thrift and deaths in pregnant cattle	? / 10 / 300	Anaplasmosis (tick fever) - *Anaplasma marginale*	possible	None
Oct-24	QLD	cattle	sudden death	1 / 18 / 950	Urea poisoning	probable	None
Nov-24	QLD	cattle	reproductive - calf deaths, and abortions	30 / 20 / 150	No diagnosis	inconclusive	BVDV (type 2)
Nov-24	QLD	cattle	neurological signs and sudden death in cows	5 / 40 / 720	BEF - BEFV	probable	BVDV (type 2)
Nov-24	WA	goats	neurological signs and sudden death	2 / 2 / 40	Entertoxaemia	definitive	None
Nov-24	WA	cattle	respiratory signs and sudden death in a bull	1 / 1 / 22	Shipping fever	definitive	None
Nov-24	QLD	avian	respiratory signs - dyspnoea and ocular discharge	6 / 1 / 100	Infectious coryza - *Avibacterium avium*	definitive	Influenza A, avian infectious laryngotracheitis, Avian paramyxovirus
Nov-24	QLD	cattle	ill thrift and deaths in weaners	? / 14 / 154	Botulism - botulium toxin	probable	None
Nov-24	QLD	cattle	sudden death in weaners	2 / 8 / 30	Blackleg - *Clostridium chauvoei*	definitive	BVDV (type 2)
Dec-24	QLD	cattle	acute illness and sudden death in steers	? / 8 / 195	No diagnosis	inconclusive	None
Jan-25	QLD	cattle	deaths after short recumbency in bulls	2 / 2 / 100	Tick fever - *Babesia bovis*	definitive	None
Jan-25	QLD	cattle	ill thrift in weaners	3 / 3 / 50	Non-specific bacteraemia	possible	None
Feb-25	NT	cattle	long dead carcases	? / 100 / 200	No diagnosis	inconclusive	None
Feb-25	QLD	cattle	ill thrift and death in heifers	? / 12 / 42	Tick fever - *Babesia bovis*	definitive	None
Feb-25	QLD	cattle	ill thrift and death in weaners	8 / 3 / ?	Polycystic kidney disease - congenital	definitive	BVDV (type 2)
Mar-25	QLD	cattle	neurological signs and death	? / 80 / 240	Salt toxicity from water deprivation	probable	None

Suspected salt (water) toxicity kills 80 cows over 3 days

Case definition

In March 2025, 80 of 240 Brahman-X cows died after being transported in hot weather to a property in western QLD and yarded with water likely to have been saline. The cows showed excessive drinking, urinating, gastrointestinal pain, neurological signs, recumbency, coma and death over 1- 3 days after arrival.

Recumbent cow with sunken eyes

Disease mapping

The cattle were loaded for transport at 6am Friday morning and arrived at the property at 3pm that day having travelled in hot weather (40-49oC). They were held in yards on water and processed on Saturday when the owner noticed one cow with sunken eyes which progressed to being staggery and recumbent. The cows were offered hay on Saturday night.

Affected animals showed clinical signs that included: excessive drinking, excessive urinating, sunken eyes, staggering, standing with back legs tucked underneath or stiff front legs, green watery diarrhoea, swollen anus, sweating, diving into the dam and aggression. Some cows aborted. The cows had previously been vaccinated for botulism and 7 in 1.

Cows died in the yards and paddock; deaths were not clustered. Symptoms appeared within 24 hours of arrival at the property and progressed over 3 days. Some animals that were sick slowly recovered.

No deaths had occurred in 500 steers that were in these yards one week beforehand. There were no deaths in a mob of 130 cows that were trucked and handled the same way and went to another set of yards 100km down the road.

Gross PM examination

Two severely moribund cows were autopsied. Both had excessive fluid in the rumen and rounded livers which spilled blood on cutting and dark purple discolouration of some tissues (mesenteric lymph nodes, lung).

Differential diagnoses considered:

- Water deprivation/salt toxicity
- Transit tetany
- Cyanobacteria
- Toxins (?) added to water
- Lead poisoning
- Thiamine deficiency induced polioencephalomalacia (PEM).

Lab findings

Histology showed nephrosis in both animals, with acute tubular necrosis and haemoglobinuria in one. In conjunction with the history and clinical signs, this supported the diagnosis of salt toxicity causing the high mortality rate.

Unfortunately delays in the transport of samples due to TC Alfred meant that unpreserved tissues and bloods and aqueous fluids were unsuitable for analysis.

Management / Environment / Animal factors

A combination of predisposing factors increased the risk of acute water /salt toxicity: the cows being withheld from water; travelling in trucks in the middle of the day during extreme heat; un-adapted cattle being introduced to water with higher saline levels; the trough in the yards not being cleaned and emptied prior to use by this mob (possibly with salt built up): allowing animals to rehydrate too quickly.

Deaths following water deprivation occur when the animals rehydrate and cerebral oedema develops due to sodium imbalance and sudden movement of water into the brain. Acute renal insult and intravascular haemolysis can also occur.

Recommendations to prevent future cases:

- Ensure cattle are transported during cool weather or at the coolest time of the day and not off water for extended periods.

- Check water supplies regularly, to ensure cattle are not withheld from water.
- Don't allow thirsty cattle to gorge themselves on water, only allow access to small amounts of water frequently until rehydrated. Aim to rehydrate over 24 hours.
- Consider water quality testing
- Use a different set of yards with improved water quality for introduced cattle to avoid sudden exposure to saline water.
- Consider carting fresh water if required to transport to affected yards.
- Regularly clean the troughs

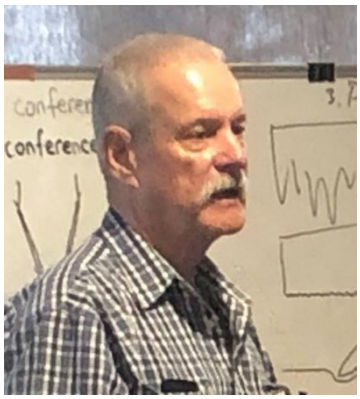
Is everyone in your practice getting the NABSnet newsletter?

If not, or if they are relying on you forwarding them a copy each time, encourage them to sign up to receive it direct and keep up-to-date with info relevant to cattle practitioners across the north. Super easy to do:

click here

First name, last name, email - and it's done

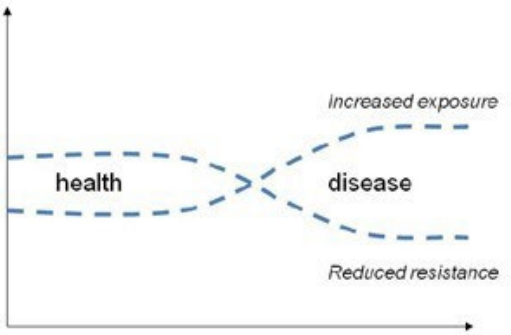
A conceptual framework for disease investigation



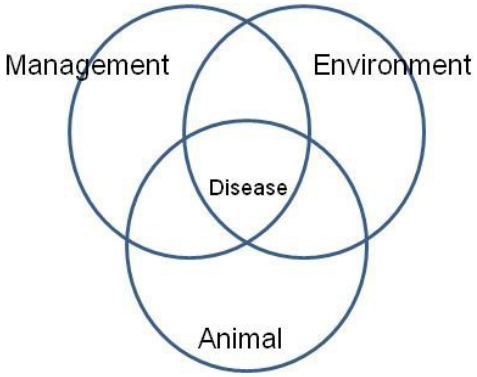
'EPI 101'

At the Masterclass in Townsville Tristan Jubb shared his approach to investigating disease events - using a simple conceptual framework with three parts.

1. Disease occurs when there is a reduction in the animal's **resistance to disease** and / or an increase in the animal's **exposure to disease**-causing agents. If resistance declines or exposure increases, or both, then there is a risk that disease will occur.



2. All disease events are multifactorial - multiple factors combine to cause a disease event. The factors fall into the categories of **management, environmental and animal factors**.

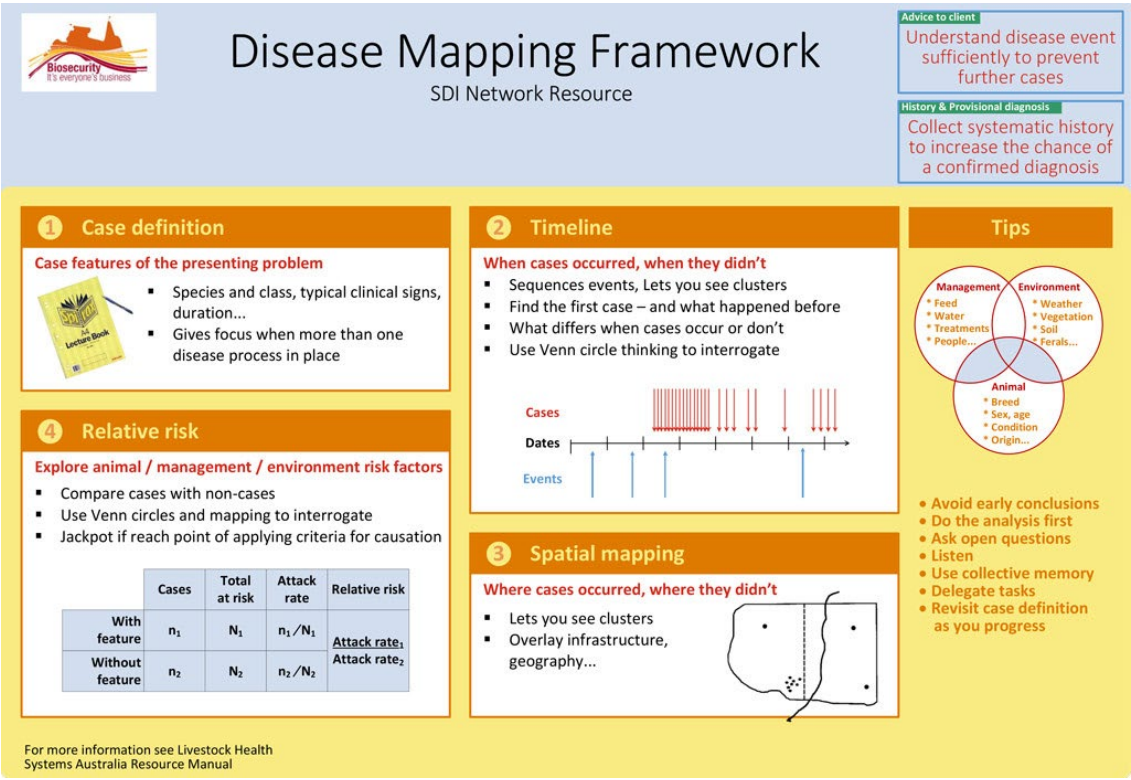


3. Clustering of cases in time, space and in their **characteristics** gives important clues as to which factors might be contributory. The **clustering of non-cases** can also **provide important clues**. Clusters of cases (and non-cases) are ***mapped* in a time-line** to mark when they occurred, on a **map** to mark where they occurred, **and in a table** to identify their characteristics such as age, sex, breed and so on, and their exposure to management and environmental risk factors.

By mapping clusters of cases in time, space and characteristics and then **systematically** working through the management, environmental, and animal factors that might have changed to reduce resistance or increase challenge, one has a simple conceptual framework to follow when investigating complex disease events.

This **process** reduces the chance of **misdiagnosis** or **mis-apportioning cause** and increases the chance of identifying the necessary changes the farmer must make to **stop a disease** event continuing and to **prevent its recurrence**, even in the absence of a diagnosis.

And it creates an excellent framework for smashing out an evidence-based SDI case report.



[Download this graphic]

Improving diagnostic outcomes with the lab

At the 2025 Masterclass Shirley Turner (pathologist at BSL QDPI) led a workshop discussion on improving diagnostic outcomes from lab submissions, and trouble-shooting problems if they do occur. Here's a summary of her advice:

Tips for sending samples

- Consider all possible differentials when deciding what samples to take - don't 'cherry pick' – remember, this may be your only opportunity!
- Use the resources available to you to guide sampling:
    - laboratory guides (hard copy/on-line) or EAD field guide
    - phone the lab (before and during the visit)
    - refer to government websites for specific information
    - take multiple samples from each animal to cover as many differentials as possible
- Sample multiple animals if available (live and dead)
- Consider environmental samples/feed sources
- Collect sufficient sample quantity for multiple tests
- Take representative samples of the tissues you are sampling (lung, kidney, normal/abnormal tissue)
- Take care with sample collection, handling and preservation
- Complete the specimen advice sheet fully, include a full clinical history
- Describe the lesions and take photos if possible (you are the pathologist's eyes)

Troubleshooting unsatisfactory outcomes

Unsatisfactory outcome	Possible cause	Remedy
No haematology result • PM blood • EDTA clotted • EDTA haemolysed	• Animal DOA or not sampled prior to euthanasia • Inadequate mixing of the EDTA blood tube • Difficulty at collection, excessive shaking of tube, storage and transportation issues • Li hep instead of EDTA • Insufficient volume – EDTA toxicity	• Sample prior to euthanasia • Use vacutainers for collection rather than syringe and needle • Fill vacutainer to the line • Collect EDTA blood first, invert EDTA tube gently 10 times immediately after blood collection • Care with handling, storage and transport
No tick fever result • Smears unsuitable	• Exposure to formalin • Condensation on the slide • High contamination • Carcase too decomposed	• Use slide holder, place in sealed container away from cooler brick • Use clean slides, avoid contamination at collection (handle by edges only, dry quickly and package immediately to avoid flies, dust etc)
No biochemistry result • Haemolysed serum • Insufficient volume	• Needle and syringe rather than vacutainers for collection • Rough handling / transport • Difficult collection (poor technique / fractious patient)	• Use vacutainers for collection • Allow blood to clot at room temp, take serum off clot within 18 hours

See more troubleshooting tips

NABSnet at the NTCA conference

The Northern Territory Cattlemen's Association (NTCA) Conference is the largest stakeholder engagement and networking event for the red meat industry in the Northern Territory. The conference brings together stakeholders from different sectors of the red meat industry, including producers, processors, policymakers, researchers, and consumers. This year's conference was held in Darwin from 19th-21st March.

The Northern Australia Biosecurity Strategy (NABS) sponsored the conference and representatives from the Department (including our NABSnet Project Leader Teagan Fitzwater) attended to engage with stakeholders and to discuss and demonstrate biosecurity measures in northern Australia, including our NABSnet program. There was great engagement at the NABS sponsored booth and overall, it was a hugely successful event.

L to R: Fiona Knox, Vicki Munster, Rosanna Carr, Josef Schmidt, Shona Smith, Teagan Fitzwater

The cattle skin survey continues to June 2025

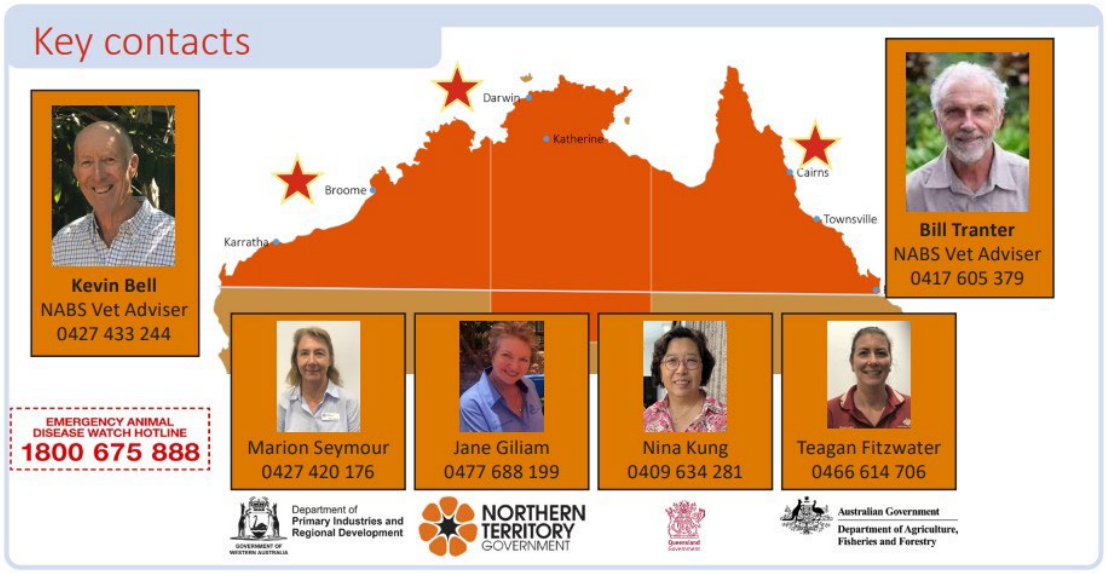
The funding arrangements for the NABSnet Cattle Skin Survey continue until the end of this Financial Year (24-25). The subsidy has been increased to $600+GST (+freight if required).

How to participate

- Take photos of the lesions
- Get punch biopsies (fresh + fixed)
- Collect serum and EDTA bloods (if possible, not critical).
- Fill in the lab submission form AND the Skin Survey submission form.
- Pack and freight to your relevant state lab, to arrive the next day.
- Submit photos to the state lab email **AND** to Teagan 0466 614 706. **You must send photos to be eligible for the subsidy.**

NT: BVL.DITT@nt.gov.au
QLD: bslclo@daf.qld.gov.au
WA: DDLS@dpird.wa.gov.au

More info and forms here



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